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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/046,953	01/15/2002	William Kress Bodin	AUS920010780USI	4417

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IBM CORPORATION (RHF)
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EXAMINER

BROWN, VERNAL U

ART UNIT	PAPER NUMBER
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2612

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09/20/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/046,953	Applicant(s) BODIN, WILLIAM KRESS	
	Examiner Vernal U. Brown	Art Unit 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-15, 17-24, 26 and 27 is/are rejected.
- 7) ☐ Claim(s) 7, 16 and 25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) ✓ | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is responsive to communication filed on January 18, 2007.

Response to Arguments

Applicant's arguments filed July 05, 2007 have been fully considered but they are not persuasive.

Applicant argues on pages 12-13 that the reference of Starner fail to teach or suggests a plurality of sensors positioned in a two dimensional way. It is the examiner's position that the reference of Starner teaches the use of any image forming device as a sensor for sensing the image of an object in front of the image forming device and the list of image forming device includes mirrors and lens but is not limited to the use of such image forming sensors (paragraph 020). It is also the examiner's position that applicant's arguments regarding the disadvantages of CCD image sensor is mute because the applicant did not claim a particular type of gesturing sensors.

Applicant argues on page 13 that it is not clear how Starner system would operate if Starner sensor were move to Pryor's panel, it is the examiner's position that the mounting of the sensors on a two-dimensional array as disclosed by Pryor (col. 2 lines 32-41) provides for the accurate determination of the pointing vector, the position and the orientation of the gesture device in order to determine the command indicated by the gesture.

Applicant argues on page 13 that Starner does not teach an independent detection event signal, the examiner interpret independent detection signal to mean each gesture sensor capture the image its view.

Applicant argues on page 14 that Sterner did not disclose a pixel-by-pixel evaluation, it is the examiner's position that this limitation is not claimed.

Applicant argues on pages 14-15 that Sterner does not teach event driven analysis. It is the examiner's position that Sterner teaches event driven analysis because the movement of the object is considered the event and the detected movement is used to control electrical appliances (paragraph 032).

Applicant argues on pages 15-16 that the reference of Sterner fails to teach the authentication of the user. It is the examiner's position that Sterner teaches the use of a user defined gesture to authorize a physical security action such as opening a door (paragraph 0035, 0038). The identification of the gesture use for authorizing a physical security action is considered the authentication of the user.

In response to applicant's argument that there is no suggestion to combine the references of Sterner and Pryor, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the reference of Stern teaches the use of gesture detected by a gesture sensor to control an electrical appliance and reference of Pryor teaches mounting of gesture sensors (109, 108, 100, 101) on a panel (138) for detecting a gesture (col. 2 lines 32-41) so as to the accurate determination of the pointing vector, the position and the

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orientation of the gesture device in order to determine the command indicated by the gesture (col. 2 lines 42-47).

Applicant argues on page 17 that the reference of Starner teaches away from mounting the gesture sensor on a panel, it is the examiner's position that Starner acknowledges the mounting of the sensors on a panel and teaches the alternative to the mounting of the gesture sensors on the panel (024).

Regarding applicant's argument regarding claim 2 on page 19, Starner teaches discrete outputs are generated over time from the gesture (paragraph 035), it is the examiner's position that the gesture is the sensor detection event and the generation of discrete outputs inherently include timing analysis to correlate the gesture with time of capture.

Applicant's argument regarding the reference of Pond is mute in view of the new ground of rejection.

Regarding applicant's argument on pages 20-21 regarding claim 3, the reference of Pryor is relied upon for teaching the use of gestures to authorize a financial transaction such as an Internet commercial transaction (col. 9 lines 4-10).

Regarding applicant's argument on page 21 regarding the combination of Starner and Pryor, it is the examiner's position that the combination of the references of Starner and Pryor is proper because the references both teach the use of gestures to authenticate a user.

Applicant argues on page 25 that the examiner has combined an excessive number of references for the rejection of claim 8, reliance on a large number of references in a rejection does not, without more, weigh against the obviousness of the claimed invention. See *In re Gorman*, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991).

Regarding applicant's argument on 26 regarding the combination of the references of Starner and Fleck in claim 9, it is the examiner's position that the reference of Fleck is not relied upon for teaching a touch sensitive approach to the detection of the gesturing instrument but is rather relied on for teaching the use of infrared sensors for the detection of a gesturing instrument.

Regarding applicant's argument regarding claim 11 on page 26, Starner et al. teaches discrete outputs are generated over time from the gesture (paragraph 035). The examiner considers the gesture define for each time period as a timing analysis of the gesture.

Applicant's arguments with respect to claim 13 have been considered but are moot in view of the new ground(s) of rejection.

Regarding applicant's argument on page 28 regarding claim 15, Starner teaches the use of a gesture to authorize a physical security action such as opening a door (paragraph 0035, 0038). It is the examiner's position that the actuation of a door allows the removal of items from a secure area.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5, 10-12, 14-15, 19-21, and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Starner et al. US Patent 20020071277 in view of Pryor US Patent 6750848.

Regarding claims 1, and 5, Starner et al. teaches a method detecting free-space gesture comprising the steps of providing a plurality of sensors such as plurality of lenses or a plurality of mirrors mounted on a control system and the sensors are adapted to detect a gesturing instrument (101) in proximity to the sensors (paragraph 020). Starner et al. teaches determining a sensor sequence from a series of sensor detection events of capturing the images of the user device and correlating the sensor sequence by converting the set of images to data representing the captured set of images in order to authenticate the user of the gesturing instrument (paragraph 027). Starner also teaches the use of a gesture to authorize a physical security action such as opening a door (paragraph 0035, 0038). Starner et al. is however not explicit in teaching the plurality of gesture sensors mounted on a panel in a two dimensional array. Pryor in an art related machine interface invention teaches the mounting of gesture sensors (109, 108, 100, 101) on a panel (138) for detecting a gesture (col. 2 lines 32-41).

It would have been obvious to one of ordinary skill in the art for the gesture sensors of Starner et al. to be mounted on a two-dimensional array as disclosed by Pryor because this provides for the accurate determination of the pointing vector, the position and the orientation of the gesture device in order to determine the command indicated by the gesture.

Regarding claim 2, Starner et al. teaches discrete outputs are generated over time from the gesture (paragraph 035) which inherently include timing analysis to correlate the gesture with time of capture.

Regarding claim 3, Sterner et al. teaches decoding a command from a gesture (paragraph 027) but is silent on teaching the authorized sequence is use in authorizing a financial transaction. Pryor in an art related machine interface invention teaches detecting signature from a free-space gesture (col. 9 lines 4-29) and the detected signature is used to authorize a financial transaction (col. 9 lines 4-10) in order to add a degree of security to the system to ensure the authenticity of the signature.

It would have been obvious to one of ordinary skill in the art for the authorized gesture sequence to be use in authorizing a financial transaction in Starner et al as disclosed by Pryor because detecting signature from a free-space gesture and the detected signature is used to authorized a financial transaction in order to add a degree of security to the system to ensure the authenticity of the signature.

Regarding claims 10, 14-15, Starner et al. teaches a method detecting free-space gesture comprising the steps of providing a panel (103) having a plurality of sensors such as plurality of lenses or a plurality of mirrors mounted on a control system and the sensors are adapted to detect

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a gesturing instrument (101) in proximity to the sensors (paragraph 020). Starner et al. teaches determining a sensor sequence from a series of sensor detection events of capturing the images of the user device and correlating the sensor sequence by converting the set of images to data representing the captured set of images in order to authenticate the user of the gesturing instrument (paragraph 027). Starner also teaches the use of a gesture to authorize a physical security action such as opening a door (paragraph 0035, 0038). Starner also teaches a computer (104) which includes a processor and memory (paragraph 021) receiving the detected gestures (paragraph 025) but is not explicit in teaching a computer readable medium encoded with medium for detecting free space gesture signature. The reference of Pryor teaches a computer which include software used for detecting free space gesture and correlate the sensor sequence to a predetermine sequence in order to authenticate a user (col. 2 lines 23-52).

It would have been obvious to one of ordinary skill in the art to have a computer readable medium encoded with medium for detecting free space gesture signature because the function of detecting a gesture and correlate the sensor sequence to a predetermine sequence in order to authenticate a user required processing power which can only be provided by a computer.

Regarding claim 11, Starner et al. teaches discrete outputs are generated over time from the gesture using a computer (paragraph 035) which inherently include timing analysis to correlate the gesture with time of capture and the computer inherently include software for performing the gesture recognition functions.

Regarding claims 12, and 21 Sterner et al. teaches decoding a command from a gesture (paragraph 027) but is silent on teaching the authorized sequence is use in authorizing a financial

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transaction. Pryor in an art related machine interface invention teaches detecting signature from a free-space gesture (col. 9 lines 4-29) and the detected signature is used to authorize a financial transaction (col. 9 lines 4-10) in order to add a degree of security to the system to ensure the authenticity of the signature. The reference of Pryor teaches a computer which include software used for detecting free space gesture and correlate the sensor sequence to a predetermine sequence in order to authenticate a user (col. 2 lines 23-52).

It would have been obvious to one of ordinary skill in the art to have a computer program for using the authorized gesture sequence for authorizing a financial transaction in Starner et al as disclosed by Pryor because detecting signature from a free-space gesture and the detected signature is used to authorized a financial transaction in order to add a degree of security to the system to ensure the authenticity of the signature.

Regarding claim 19, Starner et al. teaches a method detecting free-space gesture comprising the steps of providing a panel (103) having a plurality of sensors such as plurality of lenses or a plurality of mirrors mounted on a control system and the sensors are adapted to detect a gesturing instrument (101) in proximity to the sensors (paragraph 020). Starner et al. teaches determining a sensor sequence from a series of sensor detection events of capturing the images of the user device and correlating the sensor sequence by converting the set of images to data representing the captured set of images in order to authenticate the user of the gesturing instrument (paragraph 027). Starner also teaches the use of a gesture to authorize a physical security action such as opening a door (paragraph 0035, 0038)

Regarding claim 20, Starner et al. teaches discrete outputs are generated over time from the gesture using a computer (paragraph 035) which inherently include timing analysis to correlate the gesture with time of capture and the computer includes a processor.

Regarding claims 23-24, Starner et al. teaches the gesture system is used to actuate a door lock (paragraph 0035, 0038) and the actuation of a door allow the removal of items from a secure area.

Claims 4, 6, 13, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Starner et al. US Patent 20020071277 in view of Pryor US Patent 6750848 and further in view of Kanevsky et al. US Patent 6421453.

Regarding claims 4, 6, and 22 Starner et al. teaches decoding a command from a gesture and authorized a physical security action of unlocking a of unlocking a door (see response to claim 1) and one skilled in the art further recognizes that the unlocking of a door allow a person to transport an item from a secured area but is silent on teaching physical security action of unlocking a fuel pump. Kanevsky et al. in an analogous art teaches the use of gestures as input in order to gain access to various services and facilities (col. 4 line 61-col. 5 line 5) and teaches the use of gestures as an alternative means of providing identification for authorizing a financial transaction (col. 2 line 18-col. 3 line 25).

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It would have been obvious to one of ordinary skill in the art to have a sequence is used to authorize a physical security action and the physical security action comprises unlocking a door or a fuel pump door in Starner et al. because gestures are use as a means of identifying a user in order to authorize a financial transaction for service and the unlocking of the gas pump is considered a means of gaining access to a refueling service.

Regarding claim 13 Starner et al. teaches decoding a command from a gesture and authorized a physical security action of unlocking a of unlocking a door (see response to claim 1) and the reference of Pryor teaches a computer which include software used for detecting free space gesture and correlate the sensor sequence to a predetermine sequence in order to authenticate a user (col. 2 lines 23-52) but is silent on teaching physical security action of unlocking a fuel pump. Kanevsky et al. in an analogous art teaches the use of gestures as input in order to gain access to various services and facilities (col. 4 line 61-col. 5 line 5) and teaches the use of gestures as an alternative means of providing identification for authorizing a financial transaction (col. 2 line 18-col. 3 line 25).

It would have been obvious to one of ordinary skill in the art to have a sequence is used to authorize a physical security action and the physical security action comprises unlocking a door or a fuel pump door in Starner et al. because gestures are use as a means of identifying a user in order to authorize a financial transaction for service and the unlocking of the gas pump is considered a means of gaining access to a refueling service.

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Claims 8 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Starner et al. US Patent 20020071277 in view of Pryor US Patent 6750848 in view of Hiroaki US Patent 6661425 and further in view of Lawrence US Patent 3580058.

Regarding claims 8 and 26 Starner et al. teaches an array of sensors to detect gestures (paragraph 020) but is silent on teaching the use of an array of acoustic sensors to detect the gesturing instrument. Hiroaki in an art related sensor system teaches the use of acoustic sensors to detect gestures (col. 17 lines 29-33). Lawrence in an art related sensor system teaches arranging acoustic sensors to produce acoustic mismatches for generating reflective pulses (col. 1 lines 43-50) for indicating the acoustic characteristic of the sensors.

It would have been obvious to one of ordinary skill in the art to modify the system of Starner as disclosed by Hiroaki in view of Lawrence because the array of acoustic sensors for detecting gestures represents an alternative to the gesture detection system as disclosed by Starner et al.

Claims 9 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Starner et al. US Patent Application Publication 20020071277 in view of Pryor US Patent 6750848 and further in view Fleck et al. US Patent 6556190.

Regarding claims 9 and 27, Starner et al. teaches an array of sensors to detect gestures (paragraph 020) but is silent on teaching providing an array of infrared (IR) sensors adapted to detect movement of gesturing instrument that are distinguishable by heat. Fleck et al. in an art related coordinate input device teaches the use of IR sensors that are distinguishable by heat (col. 7 lines 59-64) and therefore provides an alternating detecting means to the ultrasonic sensors.

It would have been obvious to one of ordinary skill in the art to provide an array of infrared (IR) sensors adapted to detect movement of gesturing instrument which are distinguishable by heat in Starner et al. because this represents an alternative to the sensory detection means disclosed by Starner et al.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Starner et al. US Patent 20020071277 in view of Pryor US Patent 6750848 in view of Hiroaki US Patent 6661425 and further in view of Lawrence US Patent 3580058.

Regarding claim 17 Starner et al. teaches an array of sensors to detect gestures (paragraph 020) but is silent on teaching the use of an array of acoustic sensors to detect the gesturing instrument. Hiroaki in an art related sensor system teaches the use of acoustic sensors to detect gestures (col. 17 lines 29-33). Lawrence in an art related sensor system teaches arranging acoustic sensors to produce acoustic mismatches for generating reflective pulses (col. 1 lines 43-50) for indicating the acoustic characteristic of the sensors. The reference of Pryor teaches a computer which include software used for detecting free space gesture and correlate the sensor sequence to a predetermine sequence in order to authenticate a user (col. 2 lines 23-52).

It would have been obvious to one of ordinary skill in the art to modify the system of Starner as disclosed by Hiroaki in view of Lawrence because the array of acoustic sensors for detecting gestures represents an alternative to the gesture detection system as disclosed by Starner et al. and a software program is necessary to control the computer for providing the processing power for authenticating the gesture.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Starner et al. US Patent Application Publication 20020071277 in view of Pryor US Patent 6750848 and further in view Fleck et al. US Patent 6556190.

Regarding claim 18, Starner et al. teaches an array of sensors to detect gestures (paragraph 020) but is silent on teaching providing an array of infrared (IR) sensors adapted to detect movement of gesturing instrument that are distinguishable by heat. Fleck et al. in an art related coordinate input device teaches the use of IR sensors that are distinguishable by heat (col. 7 lines 59-64) and therefore provides an alternating detecting means to the ultrasonic sensors. The reference of Pryor teaches a computer which include software used for detecting free space gesture and correlate the sensor sequence to a predetermine sequence in order to authenticate a user (col. 2 lines 23-52).

It would have been obvious to one of ordinary skill in the art to provide an array of infrared (IR) sensors adapted to detect movement of gesturing instrument which are distinguishable by heat in Starner et al. because this represents an alternative to the sensory detection means disclosed by Starner et al. and a software program is necessary to control the computer for providing the processing power for authenticating the gesture.

Allowable Subject Matter

Claims 7, 16, and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 7, 16, and 25, the prior art of record fail to teach or suggests the plurality of gesturing sensors is provided by an array of radio frequency identification devices.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vernal U. Brown whose telephone number is 571-272-3060. The examiner can normally be reached on 8:30-7:00 Monday-Thursday.

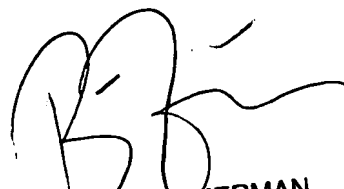
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Zimmerman can be reached on 571-272-3059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Vernal Brown
September 13, 2007


BRIAN ZIMMERMAN
PRIMARY EXAMINER